FS Meeting Agenda
Monday, June 29, 2009
9:30 – 12:00
EPA Fox Tower Office
Call-in Information: nonresponsive ; Pass Code nonresponsive

FS Matrix:

We will go through the FS Matrix information distributed on June 16th. The purpose of this discussion is to:

- Reach agreement on the factors to be included in the FS Matrix.
- Identify sources of information necessary for populating the FS Matrix.
- Identify roles and responsibilities for populating the FS Matrix.
- Develop the schedule for completing the FS Matrix.
- Discuss how to integrate source control information into the FS Matrix

Remedial Technologies Screening Table:

We will discuss the Treatment Screening Tables submitted by the LWG on June 5, 2009. The goal of the discussion will be to develop comments on the Treatment Screening Tables. Comments on the technology screening table received from Parametrix on June 9, 2009 are attached.

Disposal Site Screening Memo:

We will discuss the Disposal Site Screening Memo submitted by the LWG on June 18, 2009. The goal of the discussion will be to develop comments on the Disposal Site Screening Memo.

Status and Update:

We will discuss the status of the RAOs and ARARs. See the attached summary from the June 19, 2009 Management Meeting.

Side Scan Sonar Report:

The side scan sonar report was submitted by the LWG on May 15, 2009. We will need to determine whether the document is sufficient to support the FS.

Next Steps:

We will discuss next steps on the FS Matrix, development of comments on the Treatment Screening Tables and Disposal Site Screening Memo, RAOs and ARARs.

ATTACHMENT 1: COMMENTS ON LWG TREATMENT SCREENING TABLES:

M E M O R A N D U M

Date:	**June 9, 2009**
To:	**Eric Blischke and Chip Humphrey**
From:	**Brad Hermanson**
Subject:	**Portland Harbor RI/FS Oversight – Comments on LWG Treatment Technologies Table**
cc:	**Ron French/CDM** **Todd King/CDM** **John Malek**
Project Number:	**Portland Harbor RIFS Oversight**
Project Name:	**415-2328-007-007-RS01**

This memorandum summarizes comments on "LWG Treatment Screening Tables (06-05-09)", received by Eric Blischke on that same date. The purpose of the review was to make a quick, relatively high-level pass at the information provided, checking logic and consistency based on common knowledge. If a more detailed technical review of the information is needed, including validation of the technical opinions provided in the memorandum, that review can be appended to the information below.

GENERAL COMMENTS

1. Despite the email transmittal's indication that the table is a technology screening table, the table is really a process option screening table, focused only on treatment process options. The process option screening step is the fourth step in the alternative development process, as outlined in RI/FS Guidance. Technology screening occurs when the general response actions that apply to the site have been identified, and then the world of technologies is reduced down to those that fit the site conditions and COCs. The process option screening is done to determine if, indeed, there are process options that work for the technologies and select process options to represent the technologies in alternatives development. If there are no process options that work, the entire technology category may be eliminated.

   Because there are a number of steps that occur prior to the process option development, it would be useful to see the preceding steps so the process option screening makes sense and the context is clear.

2. Because the site is relatively large and has a variety of COCs and physical characteristics that vary across the site, it should be made clear that a single process option may not be selected or desirable to represent the technology for the entire site. It may be necessary as the FS proceeds, to allow for a number of process options to be applied based on the

situation at various AOPCs and SMAs at the site, and possibly combinations of process options. At this point it may only be possible and useful to eliminate options that are completely outside of the possibilities so there are still a variety of options that can be considered when the FS is developed.

In Table 2, for example In-Situ Vitrification and Electrochemical Remediation it is noted that “Treatment area is extensive”. Although this was not used as a rationale for screening, it suggests that the analysis is being applied to the entire harbor and not just portions of the harbor.

TABLE-FORMAT/CONTENT/PROTOCOL COMMENTS

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- In the table, a brief description of each process option would be helpful and would provide insight as to what the process option is used. As it is and on its own, it is difficult to verify the information provided on its own merits.

- The "Demonstrated Effectiveness" column needs to be explained, and that column links to the column "Time to achieve goals". Statements like "Moderate" or "High" are not clear, and all depend on the circumstances, including media and COC, and required levels of treatment. Some quantitative information would be useful to clarify the effectiveness information. Again, at this point the objective of the screening may be mostly trying to point out the circumstances where the process option works particularly well or not at all.

  (Note, the cost column is similar in format, but cost amounts are placed in the footnote, which provides the required quantification to explain the cost information in the column.)

- Related to the previous note, ARARs and risk management goal attainment may drive some of the endpoints for treatment, both in-situ and for removed material. A key part of the ultimate analysis provided in the FS may be to define required treatment endpoints and whether the process option can meet those endpoints. This analysis should wait for the FS, when all analysis, including the ARARs discussion, can be presented and the endpoints defined.

- "Compatible GRA" is titled incorrectly. General Response Action’s (GRA’s) are generic categories of action such as "removal" or "containment". GRAs are supposed to describe remedial actions that will be implemented to meet the RAOs established for Portland Harbor. The technologies associated with a GRA provide the information that is shown under the column header for “Compatible GRA”. For example, with a GRA of removal, "dredging" would be a relevant technology. The ex-situ treatment and process options identified are, when tied to a removal GRA, required for handling of removed material. The column, therefore, is presenting compatible technologies. Technologies should be evaluated according to the GRA categories of:

  a. No Action
  b. Institutional Controls

c. Monitored Natural Recovery
d. Containment
e. Removal
f. In-situ Treatment
g. Ex-situ Treatment
h. Disposal

Process options such as dewatering, transportation, etc. are usually part of a specific treatment technology or remedial action and should not be evaluated as a stand alone treatment technology.

- The basis for screening out Ex-Situ biological treatment technologies is probably premature. No consideration was given to combining treatment technologies (such as composting and land application) for a GRA. Composting sediments with sludge or other products (e.g. woodchips) could be used to enrich poor soils as part of a land treatment technology. Consideration of cost vs. benefit should also be considered in this scenario as well.

PROCESS OPTION-SPECIFIC COMMENTS

First a general comment on process option technical screening: EPA's Contaminated Site Clean-up Information website (http://www.clu-in.org/) provides relevant and timely information on technologies and process options, including a screening matrix and reference guide (http://www.frtr.gov/matrix2/top_page.html). That site may provide useful information to guide or supplement the analysis done in the Portland Harbor FS.

Examining language related specifically to the process option analysis:

1. In the table, composting was tentatively ruled out. However land treatment, described in the row above, had identical language to composting. The rationale of screening out composting because of increased treatment residuals, isn't explicitly related to the effectiveness, implementability, and cost factors. If there is a higher cost for due to additional material handling, it should be reflected in the treatment cost column for the composting (showing a higher cost than land treatment) for the screening to make sense.

2. Under thermal treatment, incineration is tentatively screened out. Incineration may be a required treatment option for a RCRA-listed waste prior to land disposal of treated residuals. If a process option is potentially required for legal reasons, it should be retained for analysis in the FS, at least until a thorough ARARs or waste disposal requirements analysis is completed.

3. Under both Incineration and pyrolysis both state that transportation costs are high. Mobile treatment may be used, if available, and may more cost effective than offsite thermal treatment if the treatment volumes are high enough. The technology has been used at sites such as Times Beach, MO and Bayou Bonfouca, LA. Implementability of onsite treatment is likely to be challenging, due to public concern about the use of such

technology. But for screening purposes, to screen out certain technologies based on transportation costs may be premature.

4. The thermal desorption rationale mentions the potential for dioxin generation. Without performing a detailed process option technical analysis, that conclusion is surprising because the temperatures for thermal desorption are usually lower than the point where dioxins would be formed. Even if they were formed within the desorption unit or were part of the desorbed organic material, air pollution controls can be effective in treating the emissions.

5. All Biological/chemical in-situ methods are tentatively screened out, and a prime implementability consideration is that "Treatment area is extensive". As noted previously, the possibility of applying the process option to more limited areas, perhaps within AOPCs or SMAs, should be considered.

ATTACHMENT 2: RAO AND ARAR DISCUSSION AT JUNE 19, 2009 MANAGEMENT MEETING:

RAOs:

EPA submitted comments and a table with proposed RAOs, management goals and supporting text on June 12, 2009 in response to the LWG's proposed RAOs. A number of issues were raised at the June 19, 2009 Management Meeting. At this point, we will be making changes to the RAO text to address the identified issues and provide revised RAO language to the LWG.

The issues discussed include the following:

Riparian Soil: What is the meaning, intention and implication of the following footnote: "Riparian Soils will be treated as sediments when they have a direct effect upon sediments and surface water below the ordinary high water mark." We clarified that beach sediments are a class of riparian soils and that riparian soils will be evaluated as riparian soils, not sediments, consistent with the agreed upon human health risk assessment assumptions and ecological risk assessment problem formulation. The LWG also raised a concern that including riparian soils in the RAOs implies that they would be responsible for data collection as part of the FS. We indicated that the FS evaluation would be based on existing data, and data gaps would be filled as part of design or upland source control efforts.

Next Steps: EPA will provide clarification regarding the "direct effect" language. This may include criteria for determining when the "direct effect" condition exists.

ARARs: The LWG has suggested the following language regarding the compliance with ARARs language in the RAOs: "Comply with identified ARARs applicable to the exposure pathway, media and receptors addressed by this RAO."

Next Steps: This language appears to be generally acceptable. We will run this language by Lori Cora.

Habitat Management Goal: A question was raised about the intent of the EPA inserted language regarding consideration of future land use. We stated that the intent of this language was to ensure that the future use of property as habitat (e.g., a restoration site) and the cost of mitigation was appropriately considered in the FS.

Next Steps: We will split the sentence in question into two sentences. The revised language will read: For each detailed alternative, the FS will evaluate future land use with respect to habitat. The FS will also clearly describe whether habitat mitigation needs to be included to meet the substantive requirements of potential ARARs.

Biologically Active Zone: In our comments, we stated: "As a practical matter, data from surface sediments collected between 0 and 30 cm will be used to represent conditions in

the biologically active zone." The LWG questioned whether we would consider different depths of the biologically active zone. We stated that in general, we did not think that efforts to establish this depth on a case by case basis would be worth the effort due to the variability of this zone throughout the site.

Next Steps: No changes necessary.

Groundwater: The LWG would like to remove groundwater from RAO 1 because no direct exposure to groundwater occurs. In addition, the LWG objects to the term "groundwater" because the transition zone water that we collected is a mixture of groundwater and surface water. The LWG also asked whether the groundwater component of the various RAOs was intended to include groundwater at the upland facilities. We clarified that this was not the case.

Next Steps: We will attempt to resolve this issue by including groundwater in the definition of sediments. Further discussion on this topic is required.

Surface Water: The LWG would like to include the language "to the extent practicable" in the surface water RAOs to recognize that upstream contamination will prevent the achievement of some protective levels for surface water. A similar qualification was included in the Fox River ROD (Achieve, to the extent practicable, surface water quality criteria through the Lower Fox River and Green Bay). We agreed to consider this but also explained that that the supporting text clarifies that the surface water reductions will be achieved through sediment remedies.

Next steps: We will include the "to the extent practicable" language in the supporting text but not the RAO.

Reducing risk vs. Reducing Concentration: The RAOs clearly state that the goal is to reduce risk. However, the language in the supporting text is less clear (See RAO 1 for example).

Next Steps: We will revise the supporting text to read (RAO 1 example)

> This RAO applies to direct human health sediment exposure scenarios found to have an unacceptable risk in the risk assessment. The goal is to achieve acceptable risk levels by reducing COC concentrations and/or preventing human exposure to contaminated sediments and groundwater through sediment remedies for chemicals that exceed risk-based threshold concentrations as defined by the risk assessment; comply with any chemical specific ARARs identified for the site; and protect the beneficial uses of the Willamette River at the site. This RAO is intended to include exposures that occur either primarily through the solid or groundwater portions of the sediment matrix or both. COCs that occur primarily in the groundwater and that have been shown to pose a risk to human health will be addressed by this RAO.

ARARs:

Chemical Specific ARARs: We discussed ARARs briefly with the LWG on Friday. The LWG made the point that we should use the CSM and risk assessment to define ARARs and ARARs should be based on the RAOs. We stated that at this point, we believe that aquatic life and human health AWQC (the more stringent of the recommended AWQC and the current state standards) are applicable to surface water and relevant and appropriate to groundwater discharging to the Willamette River. In addition, MCLs are considered relevant and appropriate to surface water at the site. The issue of whether MCLs are relevant and appropriate to groundwater beneath the Willamette River remains unresolved. We are looking at options for resolving this issue.